CLAIMS

We claim:

1.   A method of processing a financial transaction request received from a paging network at a transaction processor, the transaction processor comprising a computer memory encoded with a transaction table, a temporary transaction table, and a history table, the method comprising the steps of:

receiving a financial transaction request in the form of a paging message comprising a set of transaction data;

storing the set of transaction data with an approval flag in the temporary transaction table;

retrieving a set of account data corresponding to an account number within the set of transaction data;

comparing a transaction amount from the set of transaction data with a balance amount from the corresponding set of account data to determine if sufficient funds are available for the requested financial transaction;

if sufficient funds are not available for the requested financial transaction, then performing the following steps a) through c):

a)   generating a transaction denied paging message;

b)   identifying a paging unit address that corresponds to a paging unit ID number within the set of transaction data;

c)   sending the transaction denied paging message to the paging unit address;

if sufficient funds are available for the requested financial transaction, then performing the following steps d) through g):

d)   activating the approval flag in the set of transaction data;

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e)   generating a transaction approved paging message comprising a plurality of data fields including an account balance data field;

f)   identifying a paging unit address that corresponds to a paging unit ID number within the set of transaction data;

g)   sending the transaction approved paging message to the paging unit address;

transferring all sets of transaction data in which the approval flag has been activated from the temporary transaction table to the transaction table;

transferring all sets of transaction data in which the approval flag has not been activated from the temporary transaction table to the history table; and

exporting the transaction table into an ACH file for transmission on an ACH network.

2.   A method in accordance with claim 1 further comprising the steps of:

receiving a transaction approval request from a merchant through a processor network, the request comprising a plurality of data fields including a transaction amount, a routing number, an account number, and a payment address;

if sufficient funds are not available for the requested financial transaction, then performing the following steps h) through i):

h)   generating a transaction denied message; and

i)   sending the transaction denied message to the payment address;

if sufficient funds are available for the requested financial transaction, then performing the following steps j) through k):

j)   generating a transaction approved message; and

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k) sending the transaction approved message to the payment address.

3. A method in accordance in accordance with claim 1, wherein the set of transaction data further comprises a payment address, the method further comprising the steps of:

if sufficient funds are not available for the requested financial transaction, then performing the following steps h) through i):

h) generating a transaction denied message; and

i) sending the transaction denied message to the payment address;

if sufficient funds are available for the requested financial transaction, then performing the following steps j) through k):

j) generating a transaction approved message; and

k) sending the transaction approved message to the payment address.

4. A method in accordance with claim 2, wherein the payment address corresponds to a merchant's point-of-sale device.

5. A method in accordance with claim 2, wherein the payment address corresponds to a payee's two-way paging device.

6. A method in accordance with claim 3, wherein the payment address corresponds to a merchant's point-of-sale device.

7. A method in accordance with claim 3, wherein the payment address corresponds

to a payee's two-way paging device.

8.   A method in accordance with claim 1, wherein the paging messages are sent and received by the transaction processor in the form of e-mail messages.

9.   A method in accordance with claim 1, wherein the financial transaction request represents an electronic payment request to a merchant.

10.   A method in accordance with claim 1, wherein the financial transaction request represents a cash withdrawal request.

11.   A method in accordance with claim 1, wherein the financial transaction request represents a balance transfer request.

12.   A method of processing financial transaction requests received from a paging network with a transaction processor comprising a network interface server, a transaction server, a database server, and a message server, the method comprising the steps of:

receiving a financial transaction request in the form of an encrypted paging message at the network interface server, said paging message comprising a set of transaction data including a routing number, an account number, a transaction amount, a security code and a paging unit ID number;

decrypting the paging message at the message server;

comparing each data field within the set of transaction data with a corresponding data

field standard from the database server to determine if the format of the data fields are acceptable for processing;

if any of the data fields do not have an acceptable format, then performing the following steps a) through d);

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a) generating a transaction denied paging message corresponding to the reason why the transaction was denied;

b) identifying a paging unit address that corresponds to a paging unit ID number within the set of transaction data;

c) encrypting the transaction denied paging message;

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d) sending the encrypted transaction denied paging message to the paging unit address

if all of the data fields have an acceptable format, then performing the following steps e) through j):

e) assigning the transaction request a transaction reference number;

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f) storing the set of transaction data, the transaction reference number, and an approval flag in a temporary transaction table in the database server;

g) retrieving a set of account data and a set of customer data from the database server, both of which correspond to the account number in the set of transaction data;

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h) comparing a security code from the set of transaction data with a security code from the corresponding set of customer data to determine if an acceptable security code has been provided;

i) if an acceptable security code has not been provided, then performing the

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transaction denied routine designated above as steps a) through d);

j)   if an acceptable security code has been provided then performing the following steps l) through n):

l)   comparing a transaction amount from the set of transaction data with a balance amount from the corresponding set of account data to determine if sufficient funds are available for the requested financial transaction;

m)   if sufficient funds are not available for the requested financial transaction, then performing the transaction denied routine designated above as steps a) through d);

n)   if sufficient funds are available for the requested financial transaction, then performing the following steps o) through s):

o)   activating the approval flag in the set of transaction data;

p)   generating a transaction approved paging message comprising a plurality of data fields including an account balance data field;

q)   identifying a paging unit address that corresponds to a paging unit ID number within the set of transaction data;

r)   encrypting the transaction approved paging message;

s)   sending the encrypted transaction approved paging message to the paging unit address;

transferring all sets of transaction data in which the approval flag has been activated from the temporary transaction table to a transaction table in the database server;

transferring all sets of transaction data in which the approval flag has not been activated

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from the temporary transaction table to a history table in the database server; and

exporting the transaction table into an ACH file for transmission to an ACH network.

13. A method in accordance with claim 12 further comprising the steps of:

receiving a transaction approval request from a merchant through a processor network, the request comprising a plurality of data fields including a transaction amount, a routing number, an account number, and a payment address;

if sufficient funds are not available for the requested financial transaction, then performing the following steps t) through u):

t) generating a transaction denied message;

u) sending the transaction denied message to the payment address;

if sufficient funds are available for the requested financial transaction, then performing the following steps v) through w):

v) generating a transaction approved message; and

w) sending the transaction approved message to the payment address.

14. A method in accordance with claim 12, wherein the set of transaction data further comprises a payment address, the method further comprising the steps of:

if sufficient funds are not available for the requested financial transaction, then performing the following steps t) through u):

t) generating a transaction denied message;

u) sending the transaction denied message to the payment address;

if sufficient funds are available for the requested financial transaction, then performing

the following steps v) through w):

v) generating a transaction approved message; and

w) sending the transaction approved message to the payment address.

5   15.   A method in accordance with claim 13, wherein the payment address corresponds to a merchant's point-of-sale device.

16.   A method in accordance with claim 13, wherein the payment address corresponds to payee's two-way paging device.

17.   A method in accordance with claim 14, wherein the payment address corresponds to a merchant's point-of-sale device.

18.   A method in accordance with claim 14, wherein the payment address corresponds to payee's two-way paging device.

19.   A method in accordance with claim 12, wherein the paging messages are sent and received by the transaction processor in the form of e-mail messages.

20   20.   A method in accordance with claim 12, wherein the financial transaction request represents an electronic payment request to a merchant.

21.   A method in accordance with claim 12, wherein the financial transaction request

represents a cash withdrawal request.

22.   A method in accordance with claim 12, wherein the financial transaction request represents a balance transfer request.

23.   A method in accordance with claim 12, wherein the first and second security codes comprise four digit numbers.

24.   A method in accordance with claim 12, wherein the paging messages are encrypted using a public key/private key encryption scheme.

25.   A computer program product suitable for execution on a general purpose computer, the computer program product encoded with instructions for performing the following steps:

    receiving a financial transaction request at the transaction processor in the form of a paging message comprising a set of transaction data;

    storing the set of transaction data with an approval flag in a temporary transaction table in a database in the transaction processor;

    retrieving a set of account data corresponding to an account number within the set of transaction data from the database within the transaction processor;

    comparing a transaction amount from the set of transaction data with a balance amount from the corresponding set of account data to determine if sufficient funds are available for the requested financial transaction;

if sufficient funds are not available for the requested financial transaction, then performing the following steps a) through c):

a) generating a transaction denied paging message;

b) identifying a paging unit address that corresponds to a paging unit ID number within the set of transaction data;

c) sending the transaction denied paging message to the paging unit address;

if sufficient funds are available for the requested financial transaction, then performing the following steps d) through g):

d) activating the approval flag in the set of transaction data;

e) generating a transaction approved paging message comprising a plurality of data fields including an account balance data field;

f) identifying a paging unit address that corresponds to a paging unit ID number within the set of transaction data;

g) sending the transaction approved paging message to the paging unit address;

transferring all sets of transaction data in which the approval flag has been activated from the temporary transaction table to a transaction table in the database;

transferring all sets of transaction data in which the approval flag has not been activated from the temporary transaction table to a history table in the database; and

exporting the transaction table into an ACH file in the database for transmission on an ACH network.

26. A computer program product in accordance with claim 25, further encoded with

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instructions for performing the following steps:

receiving a transaction approval request from a merchant through a processor network, the request comprising a plurality of data fields including a transaction amount, a routing number, an account number, and a payment address;

5 if sufficient funds are not available for the requested financial transaction, then performing the following steps h) through i):

h) generating a transaction denied message;

i) sending the transaction denied message to the payment address;

if sufficient funds are available for the requested financial transaction, then performing

10 the following steps j) through k):

j) generating a transaction approved message; and

k) sending the transaction approved message to the payment address.

27. A computer program product in accordance with claim 25, wherein the set of transaction data further comprises a payment address, the computer program product further encoded with instructions for performing the following steps:

if sufficient funds are not available for the requested financial transaction, then performing the following steps h) through i):

h) generating a transaction denied message;

20 i) sending the transaction denied message to the payment address;

if sufficient funds are available for the requested financial transaction, then performing the following steps j) through k):

j) generating a transaction approved message; and

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k)   sending the transaction approved message to the payment address.

28.   A computer program product in accordance with claim 26, wherein the payment address corresponds to a merchant's point-of-sale device.

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29.   A computer program product in accordance with claim 26, wherein the payment address corresponds to payee's two-way paging device.

30.   A computer program product in accordance with claim 27, wherein the payment address corresponds to a merchant's point-of-sale device.

31.   A computer program product in accordance with claim 27, wherein the payment address corresponds to payee's two-way paging device.

32.   A computer program product in accordance with claim 25, wherein the paging messages are sent and received by the transaction processor in the form of e-mail messages.

33.   A computer program product in accordance with claim 25, wherein the financial transaction request represents an electronic payment request to a merchant.

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34.   A computer program product in accordance with claim 25, wherein the financial transaction request represents a cash withdrawal request.

35.   A computer program product in accordance with claim 25, wherein the financial transaction request represents a balance transfer request.

36.   A computer program product suitable for execution on a general purpose

computer, the computer program product encoded with instructions for performing the following

steps:

receiving a financial transaction request in the form of an encrypted paging, said paging

5   message comprising a set of transaction data including a routing number, an account number, a

transaction amount, a security code and a paging unit ID number;

decrypting the paging message at the message server;

comparing each data field within the set of transaction data with a corresponding data

field standard from a database in the transaction processor to determine if the format of the data

10   fields are acceptable for processing;

if any of the data fields do not have an acceptable format, then performing the following

steps a) through d);

a)   generating a transaction denied paging message corresponding to the

reason why the transaction was denied;

15   b)   identifying a paging unit address that corresponds to a paging unit ID

number within the set of transaction data;

c)   encrypting the transaction denied paging message;

d)   sending the encrypted transaction denied paging message to the paging

unit address

20   if all of the data fields have an acceptable format, then performing the following steps e)

through j):

e)   assigning the transaction request a transaction reference number;

f)   storing the set of transaction data, the transaction reference number, and

an approval flag in a temporary transaction table in the database;

g) retrieving a set of account data and a set of customer data from the database, both of which correspond to the account number in the set of transaction data;

h) comparing a security code from the set of transaction data with a security code from the corresponding set of customer data to determine if an acceptable security code has been provided;

i) if an acceptable security code has not been provided, then performing the transaction denied routine designated above as steps a) through d);

j) if an acceptable security code has been provided then performing the following steps l) through n):

l) comparing a transaction amount from the set of transaction data with a balance amount from the corresponding set of account data to determine if sufficient funds are available for the requested financial transaction;

m) if sufficient funds are not available for the requested financial transaction, then performing the transaction denied routine designated above as steps a) through d);

n) if sufficient funds are available for the requested financial transaction, then performing the following steps o) through s):

o) activating the approval flag in the set of transaction data;

p) generating a transaction approved paging message comprising a plurality of data fields including an account balance data field;

q) identifying a paging unit address that corresponds to a

paging unit ID number within the set of transaction data;

        r)   encrypting the transaction approved paging message;

        s)   sending the encrypted transaction approved paging message

to the paging unit address;

transferring all sets of transaction data in which the approval flag has been activated from

the temporary transaction table to a transaction table in the database;

transferring all sets of transaction data in which the approval flag has not been activated

from the temporary transaction table to a history table in the database; and

exporting the transaction table into an ACH file for transmission to an ACH network.

37.   A computer program product in accordance with claim 36, further encoded with

instructions for performing the following steps:

receiving a transaction approval request from a merchant through a processor network,

the request comprising a plurality of data fields including a transaction amount, a routing

number, an account number, and a payment address;

if sufficient funds are not available for the requested financial transaction, then

performing the following steps t) through u):

        t)   generating a transaction denied message;

        u)   sending the transaction denied message to the payment address;

if sufficient funds are available for the requested financial transaction, then performing

the following steps v) through w):

        v)   generating a transaction approved message; and

        w)   sending the transaction approved message to the payment address.

38. A computer program product in accordance with claim 36, wherein the set of transaction data further comprises a payment address, the computer program product further encoded with instructions for performing the following steps:

if sufficient funds are not available for the requested financial transaction, then performing the following steps t) through u):

t) generating a transaction denied message;

u) sending the transaction denied message to the payment address;

if sufficient funds are available for the requested financial transaction, then performing the following steps v) through w):

v) generating a transaction approved message; and

w) sending the transaction approved message to the payment address.

39. A computer program product in accordance with claim 37, wherein the payment address corresponds to a merchant's point-of-sale device.

40. A computer program product in accordance with claim 37, wherein the payment address corresponds to payee's two-way paging device.

41. A computer program product in accordance with claim 38, wherein the payment address corresponds to a merchant's point-of-sale device.

42. A computer program product in accordance with claim 38, wherein the payment

address corresponds to payee's two-way paging device.

43. A computer program product in accordance with claim 36, wherein the paging messages are sent and received by the transaction processor in the form of e-mail messages.

44. A computer program product in accordance with claim 36, wherein the financial transaction request represents an electronic payment request to a merchant.

45. A computer program product in accordance with claim 36, wherein the financial transaction request represents a cash withdrawal request.

46. A computer program product in accordance with claim 36, wherein the financial transaction request represents a balance transfer request.

47. A computer program product in accordance with claim 36, wherein the first and second security codes comprise four digit numbers.

48. A computer program product in accordance with claim 36, wherein the paging messages are encrypted using a public key/private key encryption scheme.

49.   A transaction processor adapted for processing financial transactions received from a paging network, the transaction processor comprising:

a network interface electrically connected to a paging network;

a transaction server electrically connected to the network interface and to a processor network, wherein the transaction server is adapted to process financial transaction requests;

a message server electrically connected the network interface and the transaction server, wherein the message server is adapted to receive inbound paging messages from the network interface, and generate outbound paging messages for transmission through the network interface to the paging network;

a database electrically connected to the transaction server and the message server, the database comprising a computer memory encoded with a relational database including an account table, a transaction table, a temporary transaction table, and a history table;

a computer memory product encoded with instructions for performing the following steps:

receiving a financial transaction request in the form of a paging message comprising a set of transaction data;

storing the set of transaction data with an approval flag in the temporary transaction table;

retrieving a set of account data corresponding to an account number within the set of transaction data from the account table;

comparing a transaction amount from the set of transaction data with a balance amount from the corresponding set of account data to determine if sufficient funds are available for the requested financial transaction;

if sufficient funds are not available for the requested financial transaction, then

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performing the following steps a) through c):

        a)   generating a transaction denied paging message;

        b)   identifying a paging unit address that corresponds to a paging unit ID

number within the set of transaction data;

        c)   sending the transaction denied paging message to the paging unit address;

if sufficient funds are available for the requested financial transaction, then performing

the following steps d) through g):

        d)   activating the approval flag in the set of transaction data;

        e)   generating a transaction approved paging message comprising a plurality

of data fields including an account balance data field;

        f)   identifying a paging unit address that corresponds to a paging unit ID

number within the set of transaction data;

        g)   sending the transaction approved paging message to the paging unit

address;

transferring all sets of transaction data in which the approval flag has been activated from

the temporary transaction table to a transaction table in the database;

transferring all sets of transaction data in which the approval flag has not been activated

from the temporary transaction table to a history table in the database; and

exporting the transaction table into an ACH file in the database for transmission on an

ACH network.

50.   A transaction processor in accordance with claim 49 wherein the computer

memory product is further encoded with instructions for performing the steps of:

receiving a transaction approval request from a merchant through a processor network, the request comprising a plurality of data fields including a transaction amount, a routing number, an account number, and a payment address;

if sufficient funds are not available for the requested financial transaction, then

5   performing the following steps h) through i):

        h)   generating a transaction denied message;

        i)   sending the transaction denied message to the payment address;

if sufficient funds are available for the requested financial transaction, then performing the following steps j) through k):

        j)   generating a transaction approved message; and

        k)   sending the transaction approved message to the payment address.

    51.   A transaction processor in accordance with claim 49 wherein the computer memory product is further encoded with instructions for performing the steps of:

if sufficient funds are not available for the requested financial transaction, then

performing the following steps h) through i):

        h)   generating a transaction denied message;

        i)   sending the transaction denied message to the payment address;

if sufficient funds are available for the requested financial transaction, then performing

20   the following steps j) through k):

        j)   generating a transaction approved message; and

        k)   sending the transaction approved message to the payment address.

52.   A transaction processor in accordance with claim 50, wherein the payment address corresponds to a merchant's point-of-sale device.

53.   A transaction processor in accordance with claim 50, wherein the payment address corresponds to payee's two-way paging device.

54.   A transaction processor in accordance with claim 51, wherein the payment address corresponds to a merchant's point-of-sale device.

55.   A transaction processor in accordance with claim 51, wherein the payment address corresponds to payee's two-way paging device.

56.   A transaction processor in accordance with claim 49, wherein the paging messages are sent and received by the message server in the form of e-mail messages.

57.   A transaction processor in accordance with claim 49, wherein the financial transaction request represents an electronic payment request to a merchant.

58.   A transaction processor in accordance with claim 49, wherein the financial transaction request represents a cash withdrawal request.

59.   A transaction processor in accordance with claim 49, wherein the financial transaction request represents a balance transfer request.

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60.   A transaction processor adapted for processing financial transactions received from a paging network, the transaction processor comprising:

a network interface electrically connected to a paging network;

a transaction server electrically connected to the network interface and to a processor network, wherein the transaction server is adapted to process financial transaction requests;

a message server electrically connected the network interface and the transaction server, wherein the message server is adapted to receive inbound paging messages from the network interface, and generate outbound paging messages for transmission through the network interface to the paging network;

a database electrically connected to the transaction server and the message server, the database comprising a computer memory encoded with a relational database including an account table, a transaction table, a temporary transaction table, and a history table;

a computer memory product encoded with instructions for performing the following steps:

receiving a financial transaction request in the form of an encrypted paging message at the network interface, said paging message comprising a set of transaction data including a routing number, an account number, a transaction amount, a security code and a paging unit ID number;

decrypting the paging message at the message server;

comparing each data field within the set of transaction data with a corresponding data field standard from the database to determine if the format of the data fields are acceptable for processing;

if any of the data fields do not have an acceptable format, then performing the following

steps a) through d);

    a)   generating a transaction denied paging message corresponding to the reason why the transaction was denied;

    b)   retrieving a paging unit address corresponding to a paging unit ID number within the set of transaction data from the database;

    c)   encrypting the transaction denied paging message;

    d)   sending the encrypted transaction denied paging message to the paging unit address;

if all of the data fields have an acceptable format, then performing the following steps e) through j):

    e)   assigning the transaction request a transaction reference number;

    f)   storing the set of transaction data, the transaction reference number, and an approval flag in a temporary transaction table in the database server;

    g)   retrieving a set of account data and a set of customer data from the database, both of which correspond to the set of transaction data;

    h)   comparing a security code from the set of transaction data with a security code from the corresponding set of customer data to determine if an acceptable security code has been provided;

    i)   if an acceptable security code has not been provided, then performing the transaction denied routine designated above as steps a) through d);

    j)   if an acceptable security code has been provided then performing the following steps l) through n):

        l)   comparing a transaction amount from the set of transaction data

with a balance amount from the corresponding set of account data to determine if sufficient funds are available for the requested financial transaction;

  m) if sufficient funds are not available for the requested financial transaction, then performing the transaction denied routine designated above as steps a) through d);

  n) if sufficient funds are available for the requested financial transaction, then performing the following steps o) through s):

    o) activating the approval flag in the set of transaction data;

    p) generating a transaction approved paging message comprising a plurality of data fields including an account balance data field;

    q) identifying a paging unit address that corresponds to a paging unit ID number within the set of transaction data;

    r) encrypting the transaction approved paging message;

    s) sending the encrypted transaction approved paging message to the paging unit address;

transferring all sets of transaction data in which the approval flag has been activated from the temporary transaction table to a transaction table in the database server;

transferring all sets of transaction data in which the approval flag has not been activated from the temporary transaction table to a history table in the database server; and

exporting the transaction table into an ACH file for transmission to an ACH network.

61. A transaction processor in accordance with claim 60 wherein the computer

memory product is further encoded with instructions for performing the following steps:

receiving a transaction approval request from a merchant through a processor network, the request comprising a plurality of data fields including a transaction amount, a routing number, an account number, and a payment address;

5 if sufficient funds are not available for the requested financial transaction, then performing the following steps t) through u):

t)   generating a transaction denied message;

u)   sending the transaction denied message to the payment address;

if sufficient funds are available for the requested financial transaction, then performing

10 the following steps v) through w):

v)   generating a transaction approved message; and

w)   sending the transaction approved message to the payment address.

62.   A transaction processor in accordance with claim 60, wherein the set of transaction data further comprises a payment address, and wherein the computer memory

15 product is further encoded with instructions for performing the following steps:

if sufficient funds are not available for the requested financial transaction, then performing the following steps t) through u):

t)   generating a transaction denied message;

20 u)   sending the transaction denied message to the payment address;

if sufficient funds are available for the requested financial transaction, then performing the following steps v) through w):

v)   generating a transaction approved message; and

w)   sending the transaction approved message to the payment address.

63.   A transaction processor in accordance with claim 61, wherein the payment address corresponds to a merchant's point-of-sale device.

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64.   A transaction processor in accordance with claim 61, wherein the payment address corresponds to payee's two-way paging device.

65.   A transaction processor in accordance with claim 62, wherein the payment

10   address corresponds to a merchant's point-of-sale device.

66.   A transaction processor in accordance with claim 62, wherein the payment address corresponds to payee's two-way paging device.

15   67.   A transaction processor in accordance with claim 60, wherein the paging messages are sent and received by the transaction processor in the form of e-mail messages.

68.   A transaction processor in accordance with claim 60, wherein the financial transaction request represents an electronic payment request to a merchant.

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69.   A transaction processor in accordance with claim 60, wherein the financial transaction request represents a cash withdrawal request.

70.   A transaction processor in accordance with claim 60, wherein the financial

transaction request represents a balance transfer request.

71.   A transaction processor in accordance with claim 60, wherein the first and second

5   security codes comprise four digit numbers.

72.   A method in accordance with claim 60, wherein the paging messages are

encrypted using a public key/private key encryption scheme.